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SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: Fields, Howard A.
Khudyakov, Yury E.
- (ii) TITLE OF INVENTION: Antigenically Reactive Regions of the
Hepatitis A Virus Polyprotein
- (iii) NUMBER OF SEQUENCES: 88
- (iv) CORRESPONDENCE ADDRESS:
- (A) ADDRESSEE: Kilpatrick Stockton LLP
 - (B) STREET: 3424 Peachtree Road, N.E.
 - (C) CITY: Atlanta
 - (D) STATE: Georgia
 - (E) COUNTRY: USA
 - (F) ZIP: 30326
- (v) COMPUTER READABLE FORM:
- (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
- (A) APPLICATION NUMBER: US 09/171,432
 - (B) FILING DATE: 23-NOV-1998
 - (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
- (A) NAME: Greene, Jamie L.
 - (B) REGISTRATION NUMBER: 32,467
 - (C) REFERENCE/DOCKET NUMBER: 03063-0231US
- (ix) TELECOMMUNICATION INFORMATION:
- (A) TELEPHONE: (404) 949-2400
 - (B) TELEFAX: (404) 949-2499

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1206

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Gly	Leu	Asp	His	Ile	Leu	Ser	Leu	Ala	Asp	Ile	Glu	Glu	Glu	Gln	Met
1				5					10					15	
Ile	Gln	Ser	Val												
			20												

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1208

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Asp	Arg	Thr	Ala	Val	Thr	Gly	Ala	Ser	Tyr	Phe	Thr	Ser	Val	Asp	Gln
1				5					10					15	
Ser	Ser	Val	His												
			20												

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1210

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Glu	Val	Gly	Ser	His	Gln	Val	Glu	Pro	Leu	Arg	Thr	Ser	Val	Asp	Lys
1				5					10					15	
<hr/>															
Pro	Gly	Ser	Lys												
			20												

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1211

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Glu	Pro	Leu	Arg	Thr	Ser	Val	Asp	Lys	Pro	Gly	Ser	Lys	Lys	Thr	Gln
1				5					10					15	
<hr/>															
Gly	Glu	Lys	Phe												
			20												

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1212

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Asp	Lys	Pro	Gly	Ser	Lys	Lys	Thr	Gln	Gly	Glu	Lys	Phe	Phe	Leu	Ile
1				5					10					15	
His Ser Ala Asp															
20															

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1215

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Leu	Tyr	Asn	Glu	Gln	Phe	Ala	Val	Gln	Gly	Leu	Leu	Arg	Tyr	His	Thr
1				5					10					15	
Tyr Ala Arg Phe															
20															

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1216

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

His	Thr	Tyr	Ala	Arg	Phe	Gly	Ile	Glu	Ile	Gln	Val	Gln	Ile	Asn	Pro
1				5				10						15	
Thr	Pro	Phe	Gln												
			20												

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1217

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Ile	Asn	Pro	Thr	Pro	Phe	Gln	Gln	Gly	Gly	Leu	Ile	Cys	Ala	Met	Val
1				5				10						15	
Pro	Gly	Asp	Gln												
			20												

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 1..20
(D) OTHER INFORMATION: /label= YK-1222

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

His	Phe	Lys	Asp	Pro	Gln	Tyr	Pro	Val	Trp	Glu	Leu	Thr	Ile	Arg	Val
1				5					10					15	

Trp	Ser	Glu	Leu
			20

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 1..20
(D) OTHER INFORMATION: /label= YK-1224

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Asn	Ile	Gly	Thr	Gly	Thr	Ser	Ala	Tyr	Thr	Ser	Leu	Asn	Val	Leu	Ala
1				5					10					15	

Arg	Phe	Thr	Asp
			20

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1235

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser	Asp	Pro	Ser	Gln	Gly	Gly	Gly	Ile	Lys	Ile	Thr	His	Phe	Thr	Thr
1				5					10					15	

Trp	Thr	Ser	Ile
			20

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1236

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Gly	Gly	Ile	Lys	Ile	Thr	His	Phe	Thr	Thr	Trp	Thr	Ser	Ile	Pro	Thr
1				5						10				15	

Leu	Ala	Ala	Gln
			20

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1241
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Gln	Phe	Pro	Phe	Asn	Ala	Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val
1				5					10					15	
Ile Pro Val Asp															
20															

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1242
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Phe	Asn	Ala	Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val	Ile	Pro	Val
1				5					10					15	

Asp Pro Tyr Phe
20

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1243

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val	Ile	Pro	Val	Asp	Pro	Tyr
1				5					10					15	
Phe Phe Gln Met															
20															

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1244

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Ile Lys Val Ile Pro Val Asp Pro Tyr Phe Phe Gln Met Thr Asn Thr
 1 5 10 15

Asn Pro Asp Gln
 20

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1247

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Lys Cys Ile Thr Ala Leu Ala Ser Ile Cys Gln Met Phe Cys Phe Trp
 1 5 10 15

Arg Gly Asp Leu
 20

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1248

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

```

Phe Trp Arg Gly Asp Leu Val Phe Asp Phe Gln Val Phe Pro Thr Lys
1           5           10           15

Tyr His Ser Gly
          20

```

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1249

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

```

Phe Asp Phe Gln Val Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu
1           5           10           15

Phe Cys Phe Val
          20

```

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:

(A) NAME/KEY: Peptide
 (B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1250

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu Phe Cys Phe Val Pro
 1 5 10 15
 Gly Asn Glu Leu
 20

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1252

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly Ile Thr Leu Lys Gln Ala Thr Thr Ala Pro Cys Ala Val Met Asp
 1 5 10 15
 Ile Thr Gly Val
 20

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1261

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Val	Ala	Ser	His	Val	Arg	Val	Asn	Val	Tyr	Leu	Ser	Ala	Ile	Asn	Leu
1				5					10					15	
Glu Cys Phe Ala															
20															

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1265

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Thr	Thr	Val	Ser	Thr	Glu	Gln	Asn	Val	Pro	Asp	Pro	Gln	Val	Gly	Ile
1				5					10					15	
Thr Thr Met Lys															
20															

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1266

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gln Asn Val Pro Asp Pro Gln Val Gly Ile Thr Thr Met Lys Asp Leu
1 - - - - - 5 - - - - - 10 - - - - - 15

Lys Gly Lys Ala
20

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1268

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Asn Arg Gly Lys Met Asp Val Ser Gly Val Gln Ala Pro Val Gly Ala
1 - - - - - 5 - - - - - 10 - - - - - 15

Ile Thr Thr Ile
20

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1271

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Ile	Thr	Thr	Ile	Glu	Asp	Pro	Val	Leu	Ala	Lys	Lys	Val	Pro	Glu	Thr
1				5					10					15	
Phe Pro Glu Leu															
20															

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1272

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Glu	Asp	Pro	Val	Leu	Ala	Lys	Lys	Val	Pro	Glu	Thr	Phe	Pro	Glu	Leu
1				5					10					15	
Lys Pro Gly Glu															
20															

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1273

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Ala	Lys	Lys	Val	Pro	Glu	Thr	Phe	Pro	Glu	Leu	Lys	Pro	Gly	Glu	Ser
1				5					10					15	

Arg	His	Thr	Ser
			20

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1274

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Phe	Pro	Glu	Leu	Lys	Pro	Gly	Glu	Ser	Arg	His	Thr	Ser	Asp	His	Met
1				5					10					15	

Ser	Ile	Tyr	Lys
			20

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:


```
(ii) MOLECULE TYPE: peptide
(iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: NO
(v) FRAGMENT TYPE: internal
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

(2) INFORMATION FOR SEO ID NO:31:

```
(ii) MOLECULE TYPE: peptide
iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: NO
(v) FRAGMENT TYPE: internal
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

His Phe Leu Cys Thr Phe Thr Phe Asn Ser Asn Asn Lys Glu Tyr Thr
1 5 10 15
Phe Pro Ile Thr
20

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide

- (iii) HYPOTHETICAL: NO

- (iv) ANTI-SENSE: NO

- (v) ~~FRAGMENT TYPE: internal~~

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1290

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Thr	Pro	Val	Gly	Leu	Ala	Val	Asp	Thr	Pro	Trp	Val	Glu	Lys	Glu	Ser
1				5				10						15	
Ala Leu Ser Ile															
20															

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide

- (iii) HYPOTHETICAL: NO

- (iv) ANTI-SENSE: NO

- (v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1307

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Leu	Ser	Phe	Ser	Cys	Tyr	Leu	Ser	Val	Thr	Glu	Gln	Ser	Glu	Phe	Tyr
1				5				10						15	

Phe Pro Arg Ala
20

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1308

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Ser	Val	Thr	Glu	Gln	Ser	Glu	Phe	Tyr	Phe	Pro	Arg	Ala	Pro	Leu	Asn
1				5				10						15	
Ser Asn Ala Met															
20															

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1310

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Ile Ala Ala Gly
20

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: - peptide-

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
(B) LOCATION: 1..20
(D) OTHER INFORMATION: /label= YK-1312

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Met Ser Arg Ile Ala Ala Gly Asp Leu Glu Ser Ser Val Asp Asp Pro
1 5 10 15

Arg Ser Glu Glu
20

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
(B) LOCATION: 1..20
(D) OTHER INFORMATION: /label= YK-1313

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

```

Ala Gly Asp Leu Glu Ser Ser Val Asp Asp Pro Arg Ser Glu Glu Asp
1          5          10          15
Lys Arg Phe Glu
                20

```

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1314

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

```

Val Asp Asp Pro Arg Ser Glu Glu Asp Lys Arg Phe Glu Ser His Ile
1          5          10          15
Glu Cys Arg Lys
                20

```

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1315

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Ser	His	Ile	Glu	Cys	Arg	Lys	Pro	Tyr	Lys	Glu	Leu	Arg	Leu	Glu	Val
1				5					10					15	
Gly Lys Gln Arg															
20															

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1316

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Pro	Tyr	Lys	Glu	Leu	Arg	Leu	Glu	Val	Gly	Lys	Gln	Arg	Leu	Lys	Tyr
1				5					10					15	
Ala Gln Glu Glu															
20															

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1317

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Gln Arg Leu Lys Tyr Ala Gln Glu Glu Leu Ser Asn Glu Val Leu Pro
1 5 10 15

Pro Pro Arg Lys
20

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1318

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Val Leu Pro Pro Pro Arg Lys Met Lys Gly Leu Phe Ser Gln Ala Lys
1 5 10 15

Ile Ser Leu Phe
20

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1319

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Phe	Ser	Gln	Ala	Lys	Ile	Ser	Leu	Phe	Tyr	Thr	Glu	Glu	His	Glu	Ile
1				5				10					15		
<hr/>															
Met	Lys	Phe	Ser												
				20											

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1327

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Lys	Val	Asn	Phe	Pro	His	Gly	Met	Leu	Asp	Leu	Glu	Glu	Ile	Ala	Ala
1				5				10					15		
<hr/>															
Asn	Ser	Lys	Asp												
				20											

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1328

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Asp	Leu	Glu	Glu	Ile	Ala	Ala	Asn	Ser	Lys	Asp	Phe	Pro	Asn	Met	Ser
1				5					10					15	

Glu	Thr	Asp	Leu
			20

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1331

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Lys	Ile	Asn	Leu	Ala	Asp	Arg	Met	Leu	Gly	Leu	Ser	Gly	Val	Gln	Glu
1				5					10					15	

Ile	Lys	Glu	Gln
			20

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..25
 - (D) OTHER INFORMATION: /label= YK-1665

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Gln	Arg	Leu	Lys	Tyr	Ala	Gln	Glu	Glu	Leu	Ser	Asn	Glu	Val	Leu	Pro
1				5					10					15	
Pro	Pro	Arg	Lys	Met	Lys	Gly	Leu	Phe							
			20					25							

- (2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 25 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..25
 - (D) OTHER INFORMATION: /label= YK-1757

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Trp	Leu	Asn	Pro	Lys	Lys	Ile	Asn	Leu	Ala	Asp	Arg	Met	Leu	Gly	Leu
1				5					10					15	
Ser	Gly	Val	Gln	Glu	Ile	Lys	Glu	Gln							
			20					25							

- (2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids

(B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide
 (B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1334

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Val	Ile	Gln	Gln	Leu	Asn	Gln	Asp	Glu	His	Ser	His	Ile	Ile	Gly	Leu
1				5					10					15	

Leu	Arg	Val	Met
			20

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide
 (B) LOCATION: 1..20
 (D) OTHER INFORMATION: /label= YK-1341

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Asn	Ile	Leu	Lys	Asp	Asn	Gln	Gln	Lys	Ile	Glu	Lys	Ala	Ile	Glu	Glu
1				5					10					15	

Ala	Asp	Glu	Phe
			20

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1347

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Leu	Gly	Ser	Ile	Asn	Gln	Ala	Met	Val	Thr	Arg	Cys	Glu	Pro	Val	Val
1				5					10					15	

Cys	Tyr	Leu	Tyr
		20	

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1348

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Arg	Cys	Glu	Pro	Val	Val	Cys	Tyr	Leu	Tyr	Gly	Lys	Arg	Gly	Gly	Gly
1				5					10					15	

Lys	Ser	Leu	Thr
-----	-----	-----	-----

20

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1352

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Thr	Lys	Pro	Val	Ala	Ser	Asp	Tyr	Trp	Asp	Gly	Tyr	Ser	Gly	Gln	Leu
1				5					10					15	
Val Cys Ile Ile															
20															

(2) INFORMATION FOR SEQ ID NO:54:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1356

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Val Ser Gly Cys Pro Met Arg Leu Asn Met Ala Ser Leu Glu Glu Lys

1	5	10	15
Gly	Arg	His	Phe
20			

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1357

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Leu	Asn	Met	Ala	Ser	Leu	Glu	Glu	Lys	Gly	Arg	His	Phe	Ser	Ser	Pro
1				5					10					15	
Phe Ile Ile Ala															
20															

(2) INFORMATION FOR SEQ ID NO:56:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1..20
 - (D) OTHER INFORMATION: /label= YK-1360

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

```

Asn Pro Ser Pro Lys Thr Val Tyr Val Lys Glu Ala Ile Asp Arg Arg
1           5           10           15
Leu His Phe Lys
                20

```

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1361

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

```

Val Lys Glu Ala Ile Asp Arg Arg Leu His Phe Lys Val Glu Val Lys
1           5           10           15
Pro Ala Ser Phe
                20

```

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1362

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Val Lys Pro Ala Ser Phe Phe Lys Asn Pro His Asn Asp Met Leu Asn
1 5 10 15

Val Asn Leu Ala
20

(2) INFORMATION FOR SEQ ID NO:59:

~~(i) SEQUENCE CHARACTERISTICS:~~

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1363

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Lys Asn Pro His Asn Asp Met Leu Asn Val Asn Leu Ala Lys Thr Asn
1 5 10 15

Asp Ala Ile Lys
20

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (xi) SEQUENCE DESCRIPTION: SEO ID NO:60:

(2) INFORMATION_FOR_SEQ_ID_NO:61:—

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

- (ix) FEATURE:

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

(2) INFORMATION FOR SEQ ID NO:62:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

- ```
(ii) MOLECULE TYPE: peptide
(iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: NO
```

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1368

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser   | Gln | Gly | Ile | Ser | Asp | Asp | Asp | Asn | Asp | Ser | Ala | Val | Ala | Glu | Phe |
| 1     |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| <hr/> |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Phe   | Gln | Ser | Phe |     |     |     |     |     |     |     |     |     |     |     |     |
|       |     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1369

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp   | Ser | Ala | Val | Ala | Glu | Phe | Phe | Gln | Ser | Phe | Pro | Ser | Gly | Glu | Pro |
| 1     |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| <hr/> |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser   | Asn | Ser | Lys |     |     |     |     |     |     |     |     |     |     |     |     |
|       |     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1370

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser Asn Ser Lys Leu Ser Gly  
1 5 10 15

Phe Phe Gln Ser  
20

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..25

(D) OTHER INFORMATION: /label= YK-1832

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser  
1 5 10 15

Asn Ser Lys Leu Ser Gly Phe Phe Gln  
20 25

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

(ix) FEATURE:  
 (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1374

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His             | Gly | Val | Thr | Lys | Pro | Lys | Gln | Val | Ile | Lys | Leu | Asp | Ala | Asp | Pro |
| 1               |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val Glu Ser Gln |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

(ix) FEATURE:  
 (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1376

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly             | Leu | Val | Arg | Lys | Asn | Leu | Val | Gln | Phe | Gly | Val | Gly | Glu | Lys | Asn |
| 1               |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly Cys Val Arg |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

~~(A) NAME/KEY: Peptide~~  
(B) LOCATION: 1..20  
(D) OTHER INFORMATION: /label= YK-1382

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Val | Leu | Met | Lys | Val | Pro | Thr | Ile | Pro | Lys | Phe | Arg | Asp | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr | Gln | His | Phe |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
(B) LOCATION: 1..20  
(D) OTHER INFORMATION: /label= YK-1388

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Glu | Lys | Ala | Thr | Tyr | Val | His | Lys | Lys | Asn | Asp | Gly | Thr | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Val | Asp | Leu | Thr |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1389

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asn | Asp | Gly | Thr | Thr | Val | Asp | Leu | Thr | Val | Asp | Gln | Ala | Trp | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |
|-----|-----|-----|-----|
| Gly | Lys | Gly | Glu |
|     |     |     | 20  |

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1390

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Lys | Gly | Glu | Gly | Leu | Pro | Gly | Met | Cys | Gly | Gly | Ala | Leu | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |
|-----|-----|-----|-----|
| Ser | Ser | Asn | Gln |
|     |     |     | 20  |

## (2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1393

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Val Ala Lys Leu Val Thr Gln Glu Met Phe Gln Asn Ile Asp Lys Lys  
 1                      5                      10                      15  
 Ile Glu Ser Gln  
                     20

## (2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1394

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Arg Ile Met Lys Val Glu Phe Thr Gln Cys Ser Met Asn Val Val Ser  
 1                      5                      10                      15

Lys Thr Leu Phe  
20

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1395

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe             | Thr | Gln | Cys | Ser | Met | Asn | Val | Val | Ser | Lys | Thr | Leu | Phe | Arg | Lys |
| 1               |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser Pro Ile Tyr |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:75:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1399

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:



Met Leu Ser Lys Tyr Ser Leu Pro Ile Val Glu Glu Pro Glu Asp Tyr  
 1 5 10 15

Lys Glu Ala Ser  
 20

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1407

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Leu Asp Glu Asn Gly Leu Leu Leu Gly Val His Pro Arg Leu Ala Gln  
 1 5 10 15

Arg Ile Leu Phe  
 20

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1411

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Cys Pro Lys Asp Glu Leu Arg Pro Leu Glu Lys Val Leu Glu Ser Lys  
 1                      5                      10                      15  
 Thr Arg Ala Ile  
                     20

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1412

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Ser Lys Thr Arg Ala Ile Asp Ala Cys Pro Leu Asp Tyr Ser Ile Leu  
 1                      5                      10                      15  
 Cys Arg Met Tyr  
                     20

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1414

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg             | Met | Tyr | Trp | Gly | Pro | Ala | Ile | Ser | Tyr | Phe | His | Leu | Asn | Pro | Gly |
| 1               |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Phe His Thr Gly |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1418

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys             | Thr | Met | Ile | Arg | Phe | Gly | Asp | Val | Gly | Leu | Asp | Leu | Asp | Phe | Ser |
| 1               |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala Phe Asp Ala |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1419

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

```

Asp Leu Asp Phe Ser Ala Phe Asp Ala Ser Leu Ser Pro Phe Met Ile
1 5 10 15

Arg Glu Ala Gly
 20

```

## (2) INFORMATION FOR SEQ ID NO:82:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1424

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

```

Ile Asn Asn Val Asn Leu Tyr Tyr Val Phe Ser Lys Ile Phe Gly Lys
1 5 10 15

Ser Pro Val Phe
 20

```

## (2) INFORMATION FOR SEQ ID NO:83:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1428

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly Gln Lys Ile Val Asp Glu Phe Lys Lys Leu Gly-Met-Thr Ala Thr  
1 5 10 15

Ser Ala Asp Lys  
20

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1429

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Leu Gly Met Thr Ala Thr Ser Ala Asp Lys Asn Val Pro Gln Leu Lys  
1 5 10 15

Pro Val Ser Glu  
20

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Leu | Lys | Pro | Val | Ser | Glu | Leu | Thr | Phe | Leu | Lys | Arg | Ser | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |
|-----|-----|-----|-----|
| Asn | Leu | Val | Glu |
|     |     |     | 20  |

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1434

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Lys | Thr | Ile | Trp | Ser | Leu | Ile | Ala | Trp | Gln | Arg | Ser | Asn | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |
|-----|-----|-----|-----|
| Glu | Phe | Glu | Gln |
|     |     |     | 20  |

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label=YK-1435

---

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser             | Leu | Ile | Ala | Trp | Gln | Arg | Ser | Asn | Ala | Glu | Phe | Glu | Gln | Asn | Leu |
| 1               |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu Asn Ala Gln |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp             | Gln | Arg | Ser | Asn | Ala | Glu | Phe | Glu | Gln | Asn | Leu | Glu | Asn | Ala | Gln |
| 1               |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Trp Phe Ala Phe |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

u